

**ABSTRACT**

A modulated reflectance measurement system includes lasers for generating an intensity modulated pump beam and a UV probe beam. The pump and probe beams are focused on a measurement site within a sample. The pump beam periodically excites the measurement site and the modulation is imparted to the probe beam. For one embodiment, the wavelength of the probe beam is selected to correspond to a local maxima of the temperature reflectance coefficient of the sample. For a second embodiment, the probe laser is tuned to either minimize the thermal wave contribution to the probe beam modulation or to equalize the thermal and plasma wave contributions to the probe beam modulation.

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